

Solid & Hazardous Waste Management

Mashpee faces the challenge of managing its solid and hazardous waste in an environmentally sound manner while other priorities and issues compete for attention and funding. Before embarking on a new direction in waste management, each option should be carefully analyzed with respect to siting, technology, cost, social acceptability, environmental impact, and public versus private ownership and operation. The key to "integrated solid waste management," which is basic to this plan, is diversification - to not rely on any one method of technology.

Municipal solid waste includes garbage and refuse generated at homes, offices and industries, leaf and yard wastes, and construction and demolition wastes. Cost-effective and environmentally responsible management of solid waste involves: 1) reduction of the amount of solid waste created; 2) composting of organic wastes; 3) collection and marketing of recyclable materials; 4) incineration of waste that would otherwise be landfilled; and 5) landfilling of wastes that cannot be composted, recycled or incinerated. These are the principles of "integrated solid waste management."

Alternative waste management programs that the Town could consider include source reduction, which can be addressed through educational programs, as well as more equitable full-cost accounting and "pay as you throw" programs, which rely on direct incentives to reduce and recycle solid waste rather than mandatory recycling.

Goals and Objectives

The following Goals and Objectives were based on Mashpee's 1986 Goals and Priorities Plan, the results of the 1992 LCP survey, a September 1992 issues forum, and Regional Policy Plan goals and policies. They were approved by the Board of Health on December 1, 1994. On January 18, 1995 the Local Planning Committee (Planning Board) conducted a public hearing on the goals, objectives and policies adopted by the Board of Health, and approved the final draft on March 20, 1996.

GOAL #1. TO MINIMIZE THE PER-CAPITA VOLUME OF SOLID WASTE IN THE TOWN OF MASHPEE REQUIRING INCINERATION OR LANDFILL.

GOAL #2. TO ENSURE THAT SOLID WASTE DISPOSAL IN MASHPEE IS DONE IN AN ENVIRONMENTALLY SAFE AND COST-EFFECTIVE MANNER.

GOAL #3. TO ENSURE THAT HAZARDOUS MATERIALS AND WASTES GENERATED AND USED BY MASHPEE HOUSEHOLDS, BUSINESSES AND INSTITUTIONS ARE USED, STORED, TRANSPORTED AND DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER.

Objectives

- A. To increase participation in the Town's recycling and hazardous waste collection programs.
- B. To increase household, business and institutional reclamation, composting and recycling of solid waste materials.
- C. To ensure that at least 30 percent of municipal solid waste (defined as garbage and refuse generated in homes, offices and industries, leaf and yard wastes, and construction and demolition wastes) is diverted annually from incinerator and landfill facilities by 2000, and at least 35 percent by 2005, through the utilization of recycling and composting programs.

- D. To ensure that adequate storage facilities are available for interim storage of materials to be recycled from industrial, commercial, institutional and large-scale residential development and redevelopment.
- E. To develop an integrated solid waste management system for the Town.
- F. To minimize solid waste management costs, where possible, through cooperative regional programs and other appropriate means.
- G. To ensure that major new development and redevelopment provides for appropriate waste reduction, storage and disposal.
- H. To ensure that construction and demolition debris from new development and redevelopment projects is removed from construction sites and disposed of properly.
- I. To prevent illegal dumping of solid and hazardous wastes.
- J. To ensure that all Mashpee residents understand the importance of recycling, waste reduction and proper disposal of solid and hazardous wastes.
- K. To ensure that Mashpee businesses, institutions and households are fully informed regarding appropriate methods for minimizing the production of hazardous wastes, including source reduction, reuse, material substitution and recycling.
- L. To ensure that development and redevelopment involving the generation, use, storage, treatment, or disposal of significant amounts of hazardous wastes is not located within Wellhead Protection Districts.
- M. To ensure that potentially hazardous wastes are separated from normal household and small business trash.
- N. To ensure adequate Town and/or regional facilities for solid waste separation and the proper disposal of hazardous materials.
- O. To increase the amount of goods the Town government purchases which are made from recycled materials to at least 10% of total purchases by 2000, in order to help increase the market of recycled materials.

Current Solid Waste Management

Trends in Mashpee's Municipal Solid Waste Management

	1990	1991	1992	1993	1994	1995	1995
Composted	500	2,000	1,935	946	600	540	338
Recycled	305	451	350	338	1,463	1,524	554
Incineration	6,316	5,721	5,738	6,039	6,544	6,245	6,662
Landfilled	500	500	120	450	66	224	1,000
(Tons)	7,621	8,672	8,143	7,773	8,673	8,533	8,554

Source: Town's response to Cape Cod Commission Survey. Totals do not represent total Town waste generation since some Town data is not complete and data does not include some materials handled by private haulers. Note: The 1995 Cape Cod Commission Waste Management Report did not have Mashpee's Construction & Demolition materials accounted for. Joe DiMaggio provided the figures to complete this information.

Most Town residents (85% year round, 88% summer) use the Mashpee Transfer Station to dispose of their solid waste. The others use private hauler services. A trash drop-off area and recycling center are located at the Transfer Station, which is part of a larger solid waste management system. Trucks take the waste to the Upper Cape Transfer Station at the Mass. Military Reservation for processing. Mashpee's waste, combined with waste from Sandwich, Falmouth and MMR, is then shipped via rail to the SEMASS incinerator in Rochester. Approximately 70% of Mashpee's solid waste is currently being incinerated.

Transfer Station fees provide for about half of the total trash budget. The remaining share comes from the Town's general fund.

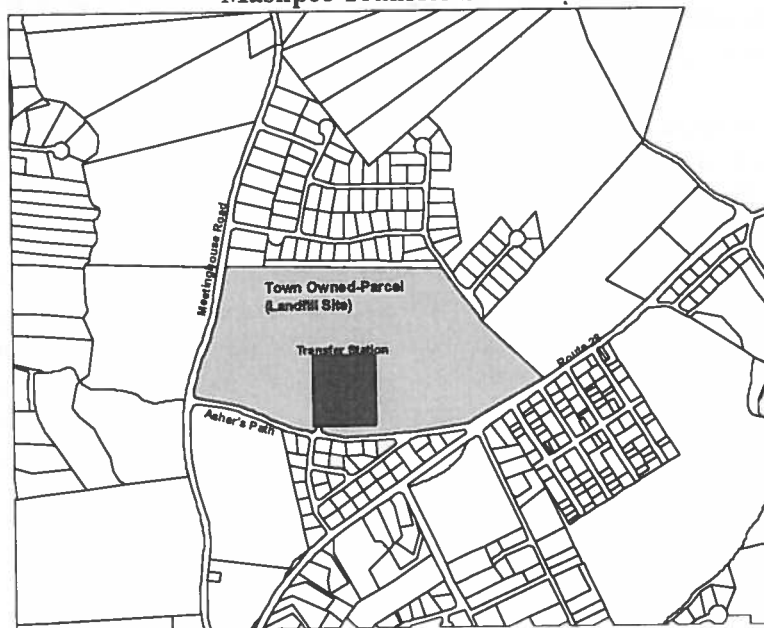
The Board of Health has mixed feelings about raising the dump sticker fees further, believing that illegal dumping would increase. The Board feels that coordinating the level of transfer station fees with surrounding towns would alleviate the illegal dumping concerns. Sandwich and Barnstable have higher fees and according to the Health Agent's records 8 of the 14 recorded illegal dumping incidents were from out of town residents. In addition, the Board believes there is public resistance to paying more for Transfer Station fees. The 1992 public opinion survey did reveal that 1/3 of residents would be willing to support more tax monies for recycling services, which currently are not part of the transfer station fee program. Sandwich, for example, includes use of their transfer station and recycling facilities as part of their \$55 fee.

The recycling center is now open the same days and hours as the transfer station. The recycling center currently collects glass, metal, newspapers and two types of plastic. Also accepted are yard waste, white goods, tires, waste oil, and automotive batteries. During the 1990's, Mashpee had increased its recycling rate (which includes composting) from 10% to over 20%. Unfortunately in 1996, the rate went down to just above 10% with an increase in both incineration and landfilling. The direction of this plan is to increase Mashpee's recycling rate through education, promotion, economic and other programs and incentives.

The State, through 310 CMR 19.000, Part I Solid Waste Material Regulations, mandates a waste ban for such materials as lead batteries, leaves, tires, aluminum, metal and glass containers, certain plastics and recyclable paper. Although the Health Agent said Mashpee is in compliance with this regulation, it is not being actively enforced and has been determined to be an unfunded mandate by the Assistant Attorney General. This finding provides the basis for attempting to increase the recycling rate through the methods discussed above, rather than by making recycling mandatory.

The Town has two composting programs. A continuous leaf composting program is conducted at the Transfer Station. Each spring this compost material is available, free of charge, to Mashpee residents. In addition, the Board of Health has household composting units available for \$25. In 1996, 180 units were made available as part of a State grant.

Mashpee Transfer Station



By 2004, Mashpee residents are expected to generate 11,000 tons of trash (based on 4.4 lbs per capita per day). An analysis using the FY 1996 costs as a guide showed the direct costs of incineration at \$40 a ton and of recycling at \$15 a ton. These costs made up about half the total trash budget. In 2004, if the Town

has reached the year 2000 target of a 30% recycling rate, it would save an estimated \$17,000. If Mashpee achieves 35%, these savings increase to \$31,000. This analysis, however, assumes SEMASS and recycling costs remain the same; SEMASS costs will likely rise and recycling may decrease as markets develop.

If Town residents reduce their waste at the household level through the implementation of source reduction principles and use of home composters, then the lbs.-per-capita per-day figure of 4.4 may drop by 2004, leading to further savings.

Recycling

Steps the Town can take to increase recycling include increasing the amount of materials that can be recycled, and providing economic, educational and other incentives for residents to recycle household waste.

Mixed paper (junk mail, office paper, cereal boxes, etc.) offers the simplest opportunity for the Town to increase its recycling rate. Barnstable and a few other towns are already recycling these materials. Mashpee residents will soon be able to recycle corrugated cardboard at the Transfer Station, as the Town has approved a recycling program for these materials.

The Cape Cod Cooperative Extension and the County Health Department are going forward with a recycling program for nickel cadmium batteries and florescent lamps. These goods contain small amounts of mercury, which, if not removed from the waste stream, will end up at the SEMASS incinerator. The Cooperative Extension attempted to work with the School Department on collecting their florescent lamps, but the school did not bother to collect them.

Button-cell batteries (those found in watches and hearing aids) will soon be collected at the Senior Center and CVS Drug Store for recycling. At present, the Town does not collect alkaline household batteries, as this is at the discretion of the hauler. The recycling of florescent lamps is a pilot program that is being tested in five towns in Barnstable County, including Mashpee. It will be for industries only at first, as they are the largest users of such lights. If successful, the program could be expanded to the municipal level.

Mashpee (and most towns throughout the country) is currently recycling only #1 and #2 plastic materials. As economics and markets change, perhaps more plastic materials (for example, yogurt containers are #5) may become recyclable. Nantucket currently recycles all types of plastic.

State grants are available for the recycling of paint materials and oil. Mashpee currently recycles oil, but should pursue funding for the collection of paint materials at its Recycling Center. This grant is one of three programs offered by the DEP's Division of Solid Waste. In 1995 Mashpee applied for and received funding for the other two programs, household composters and educational programs. The Board of Health expressed concern that the paint collection program could present a problem as it comes under the State's Hazardous Waste regulations. These regulations have strict requirements, especially in the transporting of materials, that would make the collection program financially unfeasible.

Waste Management Programs

Source Reduction: Source reduction is defined as "the design, manufacture, and use of products so as to reduce the quantity and toxicity of waste produced when the products reach the end of their useful lives." Examples include changing buying habits, improving manufacturing processes, redesigning packaging, and redesigning products to be recyclable and more durable. Educational materials regarding source reduction

of waste are available to the Town from the Cape Cod Commission and the Cape Cod Cooperative Extension, and should become part of a community-wide waste education program. A good place to focus this program may be within the public school system.

Full Cost Accounting: To fully understand how much the Town is paying for solid waste services, “full cost accounting” practices should be considered, which shows all of the full direct and indirect costs of handling and disposing of garbage, the handling and processing of recyclables and yards waste, and other related services to local residents. It can also measure the collected transfer station permit fees to see what amount comes out of the general funds.

The Town currently has a trash disposal budget, which is a separate line budget under the control of the Board of Health. The funds are appropriated from the Town’s general fund, with revenues collected from dump stickers going back into this general fund. In FY 1995, the total trash budget was \$564,839, while only \$263,248 was collected from the various Transfer Station stickers. This means that \$300,000 came out of the Town’s general funds to further support trash-related services, or more than half of the trash budget.

The Board of Health has a policy to keep the trash budget at a ratio of 50% transfer station fees and 50% general funds. The residents of Mashpee should be made aware that their Transfer Station stickers do not fully support their disposal and recycling services. The creation of an enterprise account for the Town’s solid waste program could remove any portion of funding from the general fund. Such a move would, however, necessitate an increase in the Transfer Station sticker, but could also lead to a property tax break. A forum should be set up to have the sticker price issue, general fund subsidy and illegal dumping discussed on a Town-wide level. Since illegal dumping has been found to come from non-Mashpee residents as well, surrounding Towns should be included in this discussion. The Board of Selectmen, Finance Committee, Board of Health and Planning Board should be a part of this process, as should interested citizens.

If Mashpee continues to incinerate its waste versus recycling and composting at the same rate, then trash services costs will increase further. However, if recycling and composting reach the targeted rates for 2000 and 2005, these costs can remain at a more even level, and as the recycling markets continue to improve, the Town may actually begin to make money from the materials, thus decreasing overall costs. Mashpee should take advantage of technical assistance from the Cape Cod Commission to implement full cost accounting, so that the Town may accurately compare costs of alternative waste management methods, including variable rate fees to distribute the costs of solid waste management programs more equitably.

Pay As You Throw / Unit Pricing: The Town should consider adopting a “Pay as you throw” program (see Action Plan). Pay as you throw, or unit pricing, requires residents to pay for solid waste based on the amount of waste they generate. Pay as you throw directly supports waste prevention and recycling. Because residents have to pay for whatever they throw out, they may be more likely to reduce, reuse and recycle.

Unit pricing breaks out waste-related costs from property taxes, and fundamentally alters the current system that gives no incentives for source reduction, recycling or composting. Currently, an individual’s solid waste costs are determined by the property owned rather than the amount of service demanded. Some 3,500 communities nationwide have adopted the “pay as you throw” concept. Within the Commonwealth, Eastham, Gloucester, Oak Bluffs and Tisbury have adopted this concept. Benefits offered by “pay as you throw” are twofold: an increased percentage of recycling and a more equitable system. Studies of communities that have initiated such programs reported waste reduction from 25 to 45 percent.

Town residents should be involved in the consideration of for such a program. One suggestion is to start a citizens' advisory committee, with Town officials, including the Board of Health, Planning Department, Executive Secretary and Town Accountant, in addition to the Transfer Station contracted operator, serving as *ex officio* members. More information on unit pricing / pay as you throw is found in Appendix 5 and 6 of the full-length plan.

Difficult to Manage Waste: Difficult to manage waste includes mattresses, furniture and white goods. The Town currently is able to recycle white goods, but mattresses and furniture are still being landfilled. In 1998, however, the Town landfill will be closing and an alternative disposal method will be needed. The Cape Cod Commission worked with Cape towns in siting a regional lined landfill to accept "difficult to manage waste (DTMW)." Such a landfill has opened in Bourne. The charge for accepting Mashpee's DTMW is going to be \$50/ton. Transportation costs are anticipated to be \$100 for each round trip.

Sludge: Sludge is generated from municipal sewage and septage treatment facilities. As the Town only has two private plants at this time, the amount of sludge generated in Mashpee is relatively low. As the Town grows and looks to develop a town-owned plant (or take over the management of existing plants), the amount of sludge will likely rise.

Brush / Construction and Demolition (C&D) Debris: All brush and logs collected at the transfer station are ground. Approximately 2,000 to 3,000 yards of landscape materials are generated each year. Leaves are collected for composting. About 1,500 to 2,000 yards of compost are produced annually, and the compost has become a popular item with Town residents. Some of the construction debris and demolition materials collected are ground and landfilled, to raise the landfill for eventual capping. Other C&D materials are recycled: concrete is collected by P.A. Landers (Plymouth), asphalt is taken by Lawrence Lynch (Falmouth).

At this time it appears that Mashpee is doing a good job of handling and processing brush, leaves and construction debris and demolition. The Town should continue to explore the recycling market for all of these materials to see if they can be "reused" instead of being discarded into a landfill, either in Town or elsewhere (especially once the landfill is capped).

Hazardous Waste Management

Households and businesses dispose of small quantities of hazardous waste at SEMASS and down the drain to septic systems and sewage treatment plants. The aggregate effect, however, is that some hazardous waste is being disposed of in ways which contaminate air, land and drinking water supplies.

Cost-effective management of hazardous waste begins with education aimed at minimizing generation. Much hazardous waste continues to be generated unnecessarily due to carelessness, lack of information about non-hazardous alternatives and inadequate employee training. Environmentally safe and cost-effective disposal methods exist, including paint swaps (which could become part of a redesigned swap shop at the Transfer Station); paint collection facilities at town landfills (if the State Hazardous Waste regulations for paint are relaxed); municipal used oil collection programs (which Mashpee is doing); and one-day collection events for pesticides, solvents and other hazardous wastes.

Mashpee had its own Hazardous waste collection day back in 1991. In 1994, 1995 and 1996 Mashpee and Falmouth co-sponsored a Household Hazardous Waste Collection Day. The following materials were allowed at the 1995 collection day:

- Oil based paints, thinners, turpentine, mineral spirits, stains, wood preservatives, acetone, paint stripper, shellac, marine paints with PCB's
- Herbicides, fungicides, outdated pesticides-chlordane or DDT, silvex, weed-be-gone, PCB's-polychlorinated biphenyls, pentawood preservatives, rodent poisons, no pest strips, flea collars
- Furniture polish, metal polish, waxes, moth balls, oven and drain cleaners, household deodorizers, spot removers, cesspool cleaners
- Gasoline and gasoline mixtures, antifreeze, brake and power steering fluids, radiator flush, bug and tar remover, white wall cleaner
- Photochemicals, art supplies, household batteries

Unfortunately, turn out has been a disappointment. Only 66 households (2% of the town's year-round households) participated in 1995. One possible explanation for such a low turnout has been the weather. In 1995 it was held on Saturday, August 5th, which was a hot and humid summer day, with many people probably opting for more leisurely activities. To improve the Town's participation rate in 1996, the Collection Day was held in September, after Labor Day weekend. The Town did provide plenty of promotion to this event. As of 1997, Mashpee went back to its own Hazardous Waste Collection Day, held at the Quashnet Schools.

In terms of dollars spent on household collection days, the cost per household has decreased, as this industry has become more competitive and Towns become more organized. In 1991 the cost per household was \$137; by 1995 costs were reduced to \$26 per household. The total cost and cost per household increased at Mashpee's own collection day in 1997, but the increase was offset by a more efficient operation by participating residents.

Materials should be distributed and available at Town Hall to educate residents on how to handle and properly dispose of household hazardous waste. Examples of educational materials have been provided by the Cape Cod Cooperative Extension's Barnstable County Hazardous Materials Program (see Appendix 8, full-length plan).

Known Hazardous Waste Sites: The State Department of Environmental Protection (DEP) produces a listing of known hazardous waste sites for each town. The latest listing for Mashpee shows a total of five sites. There are, however, only two known active hazardous waste sites in the Town at this time. Mashpee's landfill is listed as the only confirmed site. The Shell Station on Route 151 is a "location to be investigated." Beside the hazardous waste sites, a number of contaminant plumes have been found to be running through Mashpee's groundwater. A detailed discussion of these plumes can be found in Chapter 5 of the full length *Water Resources/Water and Wastewater Facilities* element. In the fall of 1997, Ethyl Dibromide was discovered in cranberry bogs in John's Pond Park, thus rendering these bogs unusable, at least for the short term.

Hazardous Materials Regulations: In addition to the requirement that certain hazardous materials (based on set federal standards) be reported to the Fire and Rescue Department under the *Community Right to Know Act* and regulations limiting certain land uses within the Town's groundwater protection districts, there is nothing else in place to regulate hazardous materials on a town-wide level. In order to get a handle on what hazardous materials are being used in Mashpee and assist in efforts to protect the Town's waters for both drinking and recreational purposes, the Town should consider the adoption of town-wide hazardous materials regulations.

Barnstable and Yarmouth are the currently only two towns on the Cape that have an ordinance or by-law which includes a registration and / or licensing program for hazardous materials users. To assist the other towns, the Cape Cod Commission has drafted a model hazardous materials / waste regulation (see Appendix

9 of the full-length plan. The regulation defines what hazardous materials could qualify for this regulation, including specified household quantities. There are requirements for storage, labeling, registration, contingency plans, and licensing, among other details.

Recommended Policies

The following policies are proposed to guide Town agencies, residents and developers in achieving the Town's Solid and Hazardous Waste goals and objectives:

1. To manage the Town's solid wastes using an Integrated Solid Waste Management System that includes source reduction, recycling, composting, incinerating and landfilling techniques.
2. To divert at least 30 percent of municipal solid waste from incinerator and landfilling facilities by 2000, and 40 percent by 2005, through the utilization of recycling and composting programs.
3. To reach the Town-set targets by having businesses, industries and households divert their solid waste disposal from incineration and landfilling to recycling and composting through economic, educational and other incentives.
4. To encourage through economic, educational and other incentives, that owners of industrial, commercial, institutional and multi-unit residential development and redevelopment provide adequate storage space for interim storage of materials to be recycled.
5. To provide, as part of the site plan review process, that major new industrial, commercial, institutional and multi-unit residential developments address how the quantities and types of solid waste generated will be reduced, stored and disposed in conjunction with the Town's Integrated Solid Waste Management System.
6. To provide for the prompt removal and disposal of construction and demolition debris from industrial, commercial, institutional and large-scale residential development, in accordance with the Town's Integrated Solid Waste Management System, upon completion of development.
7. To consider participation, where appropriate, in cooperative regional programs for solid and hazardous waste management which will reduce costs and increase effectiveness of these programs.
8. To vigorously pursue prevention, detection and prosecution of illegal dumping of solid and hazardous waste through barriers and other physical means, public education, active patrolling of problem areas, consideration of legal alternatives, strict enforcement and prosecution of offenders and the imposition of maximum available penalties.
9. To ensure that industrial, commercial, institutional and large scale development and redevelopment be in compliance with the Massachusetts Hazardous Waste Regulations, 310 CMR 30.00.
10. To prohibit industrial, commercial and institutional development and redevelopment involving the generation, use, storage, treatment, or disposal of significant amounts of hazardous waste within the Town's Groundwater Protection Districts.
11. To encourage the separation of potentially hazardous wastes from normal household and small business trash, as well as participation in Household Hazardous Waste Collections sponsored by the Town or others.
12. To develop and support educational programs for Town residents, including students, as well as summer residents and visitors, to enhance awareness of the importance of recycling, waste reduction and proper disposal of solid and hazardous waste.
13. To set a positive example, Town government shall make reasonable effort to ensure that at least 10% of all goods purchased by the Town (e.g. paper) are made from recycled materials by the year 2000.

Action Plan

Regulatory / Procedural Recommendations with Timetables

1. Increase the type of materials available for recycling:

- Corrugated cardboard is expected to be offered at the Transfer Station in the near future. The Board of Health has applied to the DEP for a municipal grant to get “roll offs.” If received one would be used for cardboard. *Timetable: Year 1*
- Mixed paper recycling is the next material the Town should work on. A contract had existed-with South Shore Recycling to pick up office paper at Town Hall. This same organization picks up mixed paper (in addition to office paper, mixed paper includes: junk mail, magazines, cereal boxes, and phone books) in Barnstable. The Town should explore what it would cost to have such service provided at our Transfer Station. *Timetable: Year 1*
- Look into providing recycling for household alkaline batteries. The Town, as of July 1996, had received a bin to collect Nickel Cadmium batteries as part of a recycling program coordinated. Unfortunately, promotion of this program has yet to occur. Also, a button cell (used in watches and hearing aids) recycling program is in the planning stages. Even with these programs, the alkalines would still be incinerated. Research indicated that in order to recycle alkaline batteries, it depends on the individual hauler. The Town should investigate a hauler that provides this service and see if would be cost effective to do so. *Timetable: Year 2*
- Other materials, particularly those plastics not currently being recycled, depend on the development of markets. The Town should keep abreast of market conditions (or using the Cape Cod Commission as an information clearinghouse). As markets develop for different materials, the Town should consider providing subsequent recycling opportunities at the Transfer Station. *Timetable: Year 3*

2. Increase availability of recycling facilities at Transfer Station:

- The recycling center has been made available the same days and hours as the disposal portion of the Transfer Station. By doing so should make recycling easier and eliminate some recyclable goods from being dumped in the SEMASS-bound trailer just because the recycling center was not open. *Timetable: Complete, but continue*

3. Develop educational and promotional programs:

- The first program should be aimed at increasing recycling opportunities and awareness for summer residents and visitors. The Town should publicize, working with the Chamber of Commerce and area realtors, that a permit is not needed to use recycling facilities at the Transfer Station. Since lots of summer people come from communities with recycling programs, they may be willing to participate here, if they knew such facilities exist. Also make mention of the availability of a seasonal permit for owners of rental units to use transfer station. *Timetable: Year 1 - ongoing*
- The second priority program is to work with the schools. The children represent our future. The earlier they are environmentally aware, the better chance they will not only recycle, but also learn about source reduction principles. If not already being done, recycling curriculum should be worked into the different levels of education (elementary, middle and high schools). *Timetable: Year 1 - ongoing*
- Start a solid and hazardous waste prevention and proper disposal educational program. The Barnstable County Hazardous Materials Program and the Barnstable County Cooperative Extension have provided boilerplate examples the Town can use to create educational materials for such a program. *Timetable: Year 2 - ongoing*
- A fourth tier of programs focuses on increasing recycling at the commercial level. The Town will need to not only work with businesses, but their private haulers as well. Currently, corrugated cardboard is the most prevalent material businesses are recycling. The Town, also working with the Chamber,

should promote those businesses that are recycling as examples for others. Finally, the Town (working with the Cape Cod Commission) should stay aware and watch for other materials to be collected at the commercial as markets develop. *Timetable: Year 2 - ongoing*

- A final set of programs have to do with multi-family residential and resorts. The Town should work with the owners and their private haulers to have such facilities offer on-site recycling opportunities. The same problem exist, in terms of commonly collected materials, as with businesses. An "eco-resort" has been proposed for Cape Cod. If such a concept is developed in Mashpee, it should include a recycling facility, in addition to using as many recycled materials as possible. *Timetable: Year 2 – ongoing*
- 4. Develop Direct Economic Incentives for Recycling (Full Cost Accounting and Unit Pricing):**
- Since this step is the most involved, and potentially controversial of all the recommendations, the first step is education. Begin by showing residents their transfer station stickers are covering less than half of the total trash budget. Also, use the analysis in the Facilities and Program Recommendation section to show how much more it costs to incinerate waste versus recycling. *Timetable: Year 1*
 - Begin to a process to win support of full cost accounting and unit pricing. This process should be done with the formation of a Committee, using the Cape Cod Commission's assistance, to get the Town to buy into such a concept and overcome real and perceived obstacles. Materials explaining these concepts and outlining a process to develop unit pricing have been provided in Appendix 5. *Timetable: Year 2 – ongoing*
- 5. Board of Health (Health Agent) part of proposed Staff Site Plan Review Committee:**
- This committee was discussed in the Public Safety Element to address public safety issues. The idea behind this committee is to have it address all relevant issues during a site plan review process. The Board of Health would provide review assuring that new industrial, commercial, institutional and multi-unit residential developments address solid waste issues, as directed by this plan. They can also provide the proper review of plans to ensure that no hazardous waste is used within the Town's Groundwater Protection Districts. Since the draft of this element the Town has created a "Technical Review Committee/Team" which has begun to review projects. It is coordinated by the Economic Coordinator and is only advisory in nature. *Timetable: Year 1*
- 6. Begin a planning process to consider barriers at ancient ways as one method to prevent illegal dumping:**
- As discussed in Policy #8, one way to cut down on illegal dumping is to prevent vehicles from driving down isolated ancient ways. Also mentioned were issues certain groups will have with such a proposal. Therefore, a committee should be created involving: DPW, Planning, Selectmen, Tribal Council and representatives from the 4-wheel drive community. *Timetable: Year 2*
- 7. Consider alternatives to the \$300 fine for illegal dumping.**
- Also discussed in Policy #8 was a suggestion of trash and litter pick-up as a community service in lieu of the monetary fine. Other considerations should be considered as well. *Timetable: Year 2*
- 8. Have the Town provide for the storage and collection of recyclables at Town-owned facilities.**
- Details of this action are discussed in Policy #4. In terms of outdoor storage, the same problem exists with commercial and multi-family facilities: corrugated cardboard is the only material really being collected by private haulers at this time. Once markets develop for other material, the haulers interest in collecting them may increase. Inside Town-owned facilities, the placement of glass, office paper and newspaper receptacles should be considered. *Timetable: Year 2 – ongoing*

9. Begin a planning process to get the Town's procurement officer to start buying some materials that are made from recycled materials.

- Policy #13, added at the request of the Planning Board, aims for a target of 10% of all Town purchases be from products made from some recycled content. Since there will be fiscal concerns over this policy, it is suggested that a committee be formed as part of an educational process. The following representatives should serve on this committee: Planning Department, Board of Health, Executive Secretary, Procurement Officer, and Finance Committee representative. *Timetable: Year 3*

10. Adopt Local Hazardous Materials/Waste Regulations

- The Planning Department should work with the Board of Health on creating a set of Townwide regulations for hazardous materials/waste. The rationale for such regulations is discussed in the Analysis chapter. The Cape Cod Commission's model regulation should be used as a guide in this process. *Timetable: Year 1*

Facilities and Program Recommendations

Ten Year Facility and Program Recommendations:

In order to provide information on what estimated costs the Town can expect by 2004 in its trash disposal budget, an analysis has been done comparing three different recycling rates: The 1994 rate, the targeted 2000 rate and the targeted 2005 rate. As was shown in the Analysis chapter, by 2004 the Town is expected to generate approximately 11,000 tons of municipal solid waste. The information presented below allows for some idea of what residents can expect to pay in the year 2004 and show savings by increasing their recycling rate (see table 6).

In FY '96 the direct costs of incineration were \$41.40 (The per ton figure was calculated by taking FY '96 cost and dividing by 1995 tons generated, in this case incinerated). These costs consisted of 15% of the Total Otis Operating Budget (Mashpee's share), and tonnage fees associated with Bay Colony RR and SEMASS. The direct costs of recycling were \$15.36. These costs consisted of the handling and marketing of recycled materials and monitoring of the Recycling Station. The total of these direct costs made up 1/2 of the total trash budget, with the Transfer Station contract making up an additional 40%.

Other assumptions of this analysis are that the costs per ton to handle both recycling and incineration are remaining the same, in actuality SEMASS costs can continue to rise; for recyclables, as markets develop the Town may actually get some money for each ton of material, so these costs may remain the same or even drop.

Table 6: Alternative Cost Scenarios

By 2004 about 11,000 tons of solid waste are expected to be generated by the Town:

	if still at 1994 rate		if year 2000 target is reached		if year 2005 target is reached	
	Tons	Dollars	Tons	Dollars	Tons	Dollars
Recycling	2640	\$40,550.40	3300	\$50,688.00	3850	\$59,136.00
Incineration	8030	\$332,442.00	7370	\$305,118.00	6820	\$282,348.00
Total Cost:	11,000	\$372,992.40	11,000	\$355,806.00	11,000	\$341,484.00

The rate and target information is based on: the 1994 rate of 24% recycling (which also includes composting) and 73% incineration (note: the remaining 3% consisted of landfilling "difficult to manage

waste” and is assumed to remain the same since some of these items will still need to be landfilled); the 2000 target of 30% recycling with 67% being incinerated; and the 2005 target of 35% recycling with 62% continuing to be incinerated.

It is hoped that the education of Town residents of the true costs of all aspects of their trash budget will enable support of the suggested Regulatory/Procedural recommendations. Therefore, all the aforementioned educational programs should be continued in 2004. These programs should reflect any new information in the field of solid and waste management that are unforeseen at this time due to development of markets, changes in the production of materials and greater customer support for recycle

As the residents have expressed their support with the operation and management of the Transfer Station, it is recommended that a private contractor continue to provide the day-to-day operations.

By 2005, the contract with SEMASS will be up for renewal. Any such renewal should not include annual limits of waste for the town. Such limits preclude unforeseen changes in the recyclable material markets and the ability of the Town to continue to increase its recycling rate.

Buildout Facility Recommendations:

By buildout, a renovation and expansion of the Transfer Station may be needed. As buildout approaches capacity needs should be studied further.

A study to see if curbside collection is feasible for certain portions, and/or all, of the Town should be conducted once the Town reaches buildout. This information should be done in conjunction with the above study. The rationale for combining such a study is because if curbside collection is found to be feasible, the Transfer Station would need a corresponding redesign to reflect its new role in collecting waste from trucks servicing residential areas that have adopted curbside collection. It could also be used as a recycling processing center for the Town’s materials (or perhaps become part of a regional system collecting specified materials from surrounding towns).

Coordination with Other Towns / County / Other Agencies

As our solid and hazardous waste disposal is part of a regional system, coordination with other agencies is very important during the solid and hazardous waste planning process.

Any program changes and/or improvements to the Household Hazardous Waste Collection Day needs to be coordinated with the Town of Falmouth.

The Town will need to work with Sandwich since they are processing our newspapers for recycling, which are then sent to the marketplace. As a DEP grant recipient, Sandwich’s DPW facility is expected to be expanded. This expansion will allow for more newspapers to be processed there, in addition to allowing for the processing of other materials, especially plastic. As discussed in this plan, the more recyclable materials brought to the market, the better price per unit that can be had. Therefore, the Town needs to work with Sandwich and other surrounding Towns in this and other cases where regional participation will have a positive impact on the overall trash budget.

Since Otis operates (in conjunction with Mashpee, Falmouth and Sandwich) the Upper Cape Transfer Station, coordination will be needed as changes to the existing system are proposed. The Town also will need to work with Otis on the proposed Regional Sludge Treatment Facility to ensure that any publicly-owned septage and/or sewer treatment plants can have the generated sludge treated there.

The Town should expect to work with the Cape Cod Commission on a number of issues. Currently, the Commission is looking to site a regional lined landfill for "difficult to manage waste." The Town will need such a facility once its landfill is closed in 1998. In addition, the Commission's Solid Waste Planner can assist in the discussion and implementation of full cost accounting, as directed in the Regional Policy Plan. Their assistance can be made available during the development of a unit pricing program.

Finally, the Commission acts as an information clearinghouse for source reduction, education programs of both solid and hazardous waste and other waste management issues, which can provide the Town with the latest up-to-date information in a rapidly changing environment.

An additional agency, the Town will need to coordinate any solid and hazardous waste issues with the State's DEP Division of Solid Waste, who prepares the State's Solid Waste Plan, the Town what policies and programs come from the state level. Mashpee should work with the State to help us receive grants for continuing and developing programs (e.g., home composting bin program).

